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(54) PACK.

(71) We, BOWATER PACKAGING LIMITED, a British company, of Bowater House, Knightsbridge, London, SW1X 7LR, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to a pack or pouch formed of two superimposed sheets of material with a gusset in the base, and which is capable of standing up on its own. The pack is normally formed, filled and closed on one machine in a substantially continuous manner. Closing is best performed by means of a heat sealing operation. The pack can be used for packaging many different products but is particularly suitable for fluid products and in particular powders and liquids. For display purposes, the pack can be stood on one end by opening out the base, this being possible because of the presence of the gusset.

Pouches or packs of the above description are well known and one particular type of pack already on the market is formed from two triple laminated sheets, the outer lamination being of a particular grade of orientated polypropylene, the sandwiched layer being of foil and the inner layer being of polythene. By providing a polythene inner layer foodstuffs can be packaged within the pack and when the two triple laminated sheets are superimposed with a gusset arranged in the base, sealing can be achieved by a polythene to polythene heat seal around the two side and top edge regions, except in the region of the gusset where a triple seal is performed, the outer seals being polythene to polythene and the inner seal being polypropylene to polypropylene. Such packs are very satisfactory but unfortunately the triple laminated sheet material

is very expensive.

The object of the present invention is to provide a stand up pouch or pack of the general type described above which is cheap to produce and which incorporates a paper layer or other non-heat-sealable layer in each sheet.

According to the present invention we provide a blank for the formation of a pack of the stand-up type formed of two superimposed panels of laminated material folded to provide a gusset at one end, sealed side edges and an opening at its opposite end, the blank comprising an elongate sheet of laminated material having an outer layer of paper or other non-heat-sealable material and an inner layer of heat sealable material, the sheet being formed with a plurality of parallel transverse fold lines at the central region thereof about which said sheet can be folded to form said gusset, and having a strip of heat sealable adhesive at both edge areas of said blank on the layer of paper or other non-heat-sealable material extending between the outer ones of said fold lines.

Preferably the adhesive is of the hot-melt type.

The heat-sealable layers may be polyethylene.

Preferably, the layer of non-heat-sealable material is paper which carries printing, in which case, the heat sealable adhesive can be applied to the side edge regions of the blank during the printing operation.

Also according to the present invention, we provide a method for the manufacture of a pack of the stand-up type from a sheet of laminated material having one layer or face thereof formed of paper or other non-heat-sealable material, and the other face of a heat-sealable plastics material, said method comprising applying to selected central edge areas of the non-heat-sealable material, a heat sealable ad-

hesive, folding the sheet with the heat-sealable plastics layer innermost to form a pack with front and rear panels connected at their bottom end by a gusset formed of the material between said central edge areas and open at the other end, and heat sealing the side edges of the pack and gusset, to partly close the pack.

One embodiment of the present invention is now described with reference to the drawings accompanying the provisional specification, in which:—

FIGURE 1 is a perspective view of a laminated sheet of material for forming into a stand-up pack;

FIGURE 2 is a perspective view showing the sheet folded into a position ready for filling and closing, and

FIGURE 3 is an end perspective view of the completed pack showing the gusseted base opened out to enable the pack to be stood on that end.

Referring now to the drawings, the pack is formed of a laminated sheet of material including a layer of paper or a layer of material having a paper outer surface 1 and a layer of heat-sealable material or a layer of material provided with a heat-sealable inner surface 3, for example of polythene. Parallel transverse fold lines 5, 7 and 9 are made in the sheet to define a pair of gusset panels 11 and 13 connected respectively to the side wall panels proper 15 and 17 of the pack.

The next step in the manufacture of the pack is to fold the sheet as shown in Figure 2 to provide a bottom end with a gusset and an open or top end as can be seen. Since the heat-sealable face or sheet is on the inside it is a simple matter to close the pack by applying heat and pressure.

In order to identify or advertise the product to be packed within the pack at least one of the paper surfaces of the side walls 15 or 17 may bear printed matter and after the printing operation the "blank" of Figure 1 is folded into the position shown in Figure 2 ready for filling and closing with the heat sealable surfaces innermost. The heat sealable surface is preferably a polythene sheet laminated to the paper 1 thereby providing a waterproof surface to the paper. Furthermore, food-stuffs can be packed in contact with polythene.

So that the filled and closed pack can be stood on its end, it is necessary for the side edge regions of the gusset panels 11 and 13 to be connected together in the manner shown in Figure 3. This is achieved by applying a heat sealable adhesive 19 to edge regions of the gusset panels 11, 13 so that sealing both of the gusseted and non-gusset side edge regions

of the pack may be achieved at the same time, e.g. by a single pass through a heat sealing machine, for example spaced pairs of co-operating hot rollers. The heat sealable adhesive 19 can be applied in many different ways but we prefer to apply it during the printing operation. It will thus be appreciated that once the pack has been folded and filled the closing off operation is very simple, and furthermore, because the outer surface is of paper, it is not even necessary to place a spacer device into the gusset if it is desired to form a heat seal across the base of the pack, as would be necessary if the pack has an outer heat sealable layer as is customary.

The advantages of the pack of the present invention over known stand-up packs of this type are many. The preferred pack, because it is made from a laminated sheet of paper and a heat sealable material such as polythene, is cheap to manufacture and because the outer layer or face is of paper it is easy to print upon. Furthermore, the problem in heat sealing the side edges of the gusset panels is easily overcome by applying a heat sealable adhesive during the printing operation.

It is envisaged that the pack of the present invention could have many uses. It could for example supercede existing packs for packaging powdered materials, which are traditionally packed in a polythene lined inner pack within a cardboard outer box. Also, of course, the packs can be used for many types of powder or granular material, for semi-liquid materials, for liquids and also of course for solids requiring such a pack. The pack would of course also be very suitable for packaging "wet" tissues. Although we have only described packs made of two layer laminates, it is envisaged that the invention could be applied to packs made of multi-layer laminates, e.g. a paper/foil/polythene laminate, in which the outer layer was a paper or any other layer which would not have heat sealable characteristics.

WHAT WE CLAIM IS:

1. A blank for the formation of a pack of the stand-up type formed of two superimposed panels of laminated material folded to provide a gusset at one end, sealed side edges and an opening at its opposite end, the blank comprising an elongate sheet of laminated material having an outer layer of paper or other non-heat-sealable material and an inner layer of heat sealable material, the sheet being formed with a plurality of parallel transverse fold lines at the central region thereof about which said sheet can be folded to form said gusset, and having a strip of heat sealable adhesive at both edge areas of said blank on the layer of paper or

other non-heat-sealable material extending between the outer ones of said fold lines.

2. A blank as claimed in claim 1 in which the heat-sealable adhesive is of the hot-melt type.

3. A blank as claimed in either one of claims 1 and 2 in which the laminated material comprises a layer of paper backed by a layer of polythene.

10 4. A method for the manufacture of a pack of the stand-up type from a sheet of a laminated material having one layer or face thereof formed of paper or other non-heat-sealable material, and the other face of
15 a heat-sealable plastics material, said method comprising applying to selected central edge areas of the non-heat-sealable material, a heat-sealable adhesive, folding the sheet with the heat-sealable
20 plastics layer innermost to form a pack with front and rear panels connected at their bottom end by a gusset formed of the material between said central edge areas

and open at the other end, and heat seal- 25 ing the side edges of the pack and gusset, to partly close the pack.

5. A method as claimed in claim 4 wherein the pack is provided with printed matter on its outer face and in which 30 application of the adhesive to the central edge areas of the layer or face of non-heat-sealable material is performed during the printing operation.

6. A blank for the formation of a pack 35 of the stand-up type substantially as described with reference to the drawings accompanying the provisional specification.

7. A method for the manufacture of a pack of the stand-up type substantially as 40 described.

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